

CLAIMS

What is claimed is:

1. An in-mold label composition comprising:
a microporous sheet substrate having first and second faces;
a first down coat of a film-forming polymer on the first face of the microporous sheet substrate; and
a graphic printed on the first down coat of film-forming polymer.
2. The in-mold label in accordance with claim 1 wherein the microporous sheet substrate is formed from a thermoplastic material.
3. The in-mold label in accordance with claim 2 wherein the thermoplastic material is ultra high molecular weight polyethylene.
4. The in-mold label in accordance with claim 2 wherein the thermoplastic material is ultra high molecular weight polyethylene blend.
5. The in-mold label in accordance with claim 1 wherein the first down coat is a solvent-based film-forming material.
6. The in-mold label in accordance with claim 1 wherein the first down coat is a water-based film-forming material.
7. The in-mold label in accordance with claim 1 wherein the first down coat is a radiation cured material.
8. The in-mold label in accordance with claim 1 wherein the first down coat is a polymer.
9. The in-mold label in accordance with claim 8 wherein the polymer is one or more of an acrylic polymer, a styrene-acrylic copolymer an aliphatic polyurethane, a polyester resin, and a fluoropolymer.

10. The in-mold label in accordance with claim 1 wherein the graphic is a printed media.

11. The in-mold label in accordance with claim 10 wherein the printed media is an ink.

12. The in-mold label in accordance with claim 11 wherein the ink is a colorant carrier by a resin vehicle, the resin vehicle being an acrylic polymer, a polyester, a polyurethane a silicone or an alkyd resin.

13. A method for making an in-mold label comprising the steps of:
providing a microporous sheet substrate having first and second faces;
coating the microporous sheet substrate with a first down coat of a film-forming polymer on the first face of the microporous sheet substrate;
drying the first down coat to form an undercoated sheet;
printing a graphic on the dried first down coat on the undercoated sheet;
drying the graphic.

14. The method in accordance with claim 13 wherein the step of drying the first down coat is by heating.

15. The method in accordance with claim 13 wherein the step of drying the first down coat is by irradiation.

16. The method in accordance with claim 13 wherein the step of drying the graphic is by heating.

17. The method in accordance with claim 13 wherein the step of drying the graphic is by irradiation.

18. The method in accordance with claim 13 including the steps of cutting the microporous sheet into a shape to form an in-mold label and inserting the in-mold label into a mold.

19. A method for making a molded article having an in-mold label comprising the steps of:

- providing a microporous sheet substrate having first and second faces;
- coating the microporous sheet substrate with a first down coat of a film-forming polymer on the first face of the microporous sheet substrate;
- drying the first down coat to form an undercoated sheet;
- printing a graphic on the dried first down coat on the undercoated sheet;
- drying the graphic to form an in-mold label.
- securing the in-mold label in a first portion of a mold;
- closing the mold to define a mold cavity; and
- introducing a polymer into the mold cavity to form the molded article.

20. The method in accordance with claim 19 including the step of curing the molded article.